FISH & RICHARDSON P.C.

PLEASE ENTER, /BL/ 10/24/2008

Date	October 21, 2008
To	Examiner Brian Q. Le U.S. Patent and Trademark Office
Facsimile number	10559-083100001 / (571) 273-7424
From	Ronald L. Gordon, PhD. Technology Specialist
Re	FACE TRACKING Applicant: Konstantin V. Rodyushkin et al. Application No.: 10/623,127 Filing Date: July 18, 2003 Our Ref.: 10559-0831001
Number of pages including this page	5
Message	Dear Examiner Le,

As per your facsimile dated October 16, 2008, attached please find our Supplemental Amendment in Reply to action of July 14, 2008.

Thank you.

Sincerely,

Ronald L. Gordon

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Konstantin V. Rodyushkin et al.
Serial No. : 10/623,127
Filed   : July 18, 2003
Title   : FACE TRACKING

Art Unit   : 2624
Examiner : Brian Q. Le
Conf. No. : 4494

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL AMENDMENT IN REPLY TO ACTION OF JULY 14, 2008

Please amend the above-identified application as follows:

Applicant : Konstantin V. Rodyushkin et al.
Serial No. : 10/623,127   Attorney's Docket No.: 10559-083100I / P16146
Filed   : July 18, 2003
Page   : 2 of 4

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

  1-26. (Cancelled)

  27. (Currently Amended) A computer-implemented method comprising:
using a processor to perform the steps of:

     receiving a first digital image in a sequence of digital images and eye and mouth
coordinates;

     outputting eye and mouth coordinates on a subsequent digital image in the
sequence of digital images; and

     computing transformation parameters that represent a transformation from a base
face model for the first digital image to a subsequent deformable model for the
subsequent digital image;

     wherein receiving comprises estimating the base face model, denoted Mb, and the
base face model's transformation parameters, denoted T', by the eye and mouth
coordinates;

     wherein outputting comprises:

     calculating an initial model, denoted M, for the subsequent digital image as a
transformed base model Mb using the transformation parameters T',

     rotating the subsequent image to the first digital image, denoted $I(x,y)$, to generate
a normalized model of the initial model M;

     calculating a horizontal and vertical gradient map on the rotated image; and

     estimating new transformation parameters, denoted T*, by minimizing an energy
function $E(T,I(x,y))$ representative of the goodness of fit between the transformed model

and the corresponding digital image, and of the optimality of the new transformation parameters, where T* corresponds to the complex argument of the minimum of the energy function, denoted arg minT E(T,I(x,y)).

28-30. (Cancelled)

31. (Previously Presented) The method of claim 27 in which minimizing comprises a downhill simplex method with initial transformation parameters T = T'.

32. (Previously Presented) The method of claim 27 further comprising calculating the eye centers and the mouth corners by the transformed base model using the transformation parameters T*.

Applicant : Konstantin V. Rodyushkin et al.
Serial No. : 10/623,127
Filed   : July 18, 2003
Page   : 4 of 4

Attorney's Docket No.: 10559-0831001 / P16146

REMARKS

In response to the communication dated October 16, 2008, Applicants have amended claim 27. Applicants also note that the argument T in the function $E(T,I(x,y))$ in claim 27 refers to the quantity defined in paragraph [0024]: "T = (DES, DEMS, DMW, A, DX, DY) is a looked for vector of transformation parameters."

No fee is believed to be due at this time. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: October 21, 2008

/Denis G. Maloney/
Denis G. Maloney
Reg. No. 29,670

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

22053109.doc